



The 6th Jc-IFTOMM International Symposium
(in conjunction with The 29th Jc-IFTOMM Symposium
on Theory of Machines and Mechanisms)



Date: May 12 (Friday), 2023

Venue: The University of Tokyo, Hongo Campus (Tokyo, Japan)

Program:

Opening Ceremony

9:30 Opening address by Nobuyuki Iwatsuki (Tokyo Tech.), President of Jc-IFTOMM

Session 1 Mechanisms

(9:35 - 10:35)

Chair: Akio Yamamoto (Univ. Tokyo)

9:35 Self-excited valve inspired by vocal code

*Hiroyuki Nabae, Eigo Kitamura, Koichi Suzumori (Tokyo Tech.)

9:50 Multiobjective optimization of a cable-driven robot for wrist rehabilitation using a genetic algorithm

*Andrea Botta (Tokyo Tech./Politecnico di Torino), Giuseppe Quaglia (Politecnico di Torino), Yukio Takeda (Tokyo Tech.)

10:05 Adaptive landing of an underactuated leg mechanism constrained with springs and its application to walking robot

Yuma Yokota, *Nobuyuki Iwatsuki, Kotaro Hoshiba (Tokyo Tech.)

10:20 Generation method of polygonal shapes with fillets bases on the gear meshing theory

*Daisuke Matsuura, Daisuke Hashioka, Tsune Kobayashi (Tokyo Tech.)

10:35 - 10:45 Break

Keynote Talk

(10:45 - 11:15)

Chair: Nobuyuki Iwatsuki (Tokyo Tech.)

10:45 Robot and navigation system for minimally invasive surgery

Prof. Etsuko Kobayashi (Univ. Tokyo)

Advanced Research Seminar

(11:15 - 11:45)

Chair: Kenji Hashimoto (Waseda Univ.)

11:15 In vitro study using mechanical vibration for the development of regenerative therapy application

Prof. Chikahiro Imashiro (Univ. Tokyo)

11:45 - 12:45 Lunch Break

12:45 - 14:00 General Assembly of Jc-IFTOMM (Jc-IFTOMM members only)

14:00 - 14:10 Break

Session 2 Human assistive devices

(14:10 - 15:25)

Chair: Masaharu Komori (Kyoto Univ.)

- 14:10 An assistive device for ankle motion
*Takamaru Saito, Jiang Ming, Yusuke Sugahara, Yukio Takeda (Tokyo Tech.), Marco Ceccarelli (Univ. of Rome Tor Vergata)
- 14:25 Stacked and folded bimetal sheets as a compliant actuator
*Noritomo Kota, Shunsuke Yoshimoto, Akio Yamamoto (Univ. Tokyo)
- 14:40 3D human motion acquisition and evaluation system based on openpose and 3D reconstruction for remote rehabilitation and exercise
*Keisuke Osawa, Yu You, Yi Sun, Shun Zhang (Waseda Univ.), Megumi Shimodozono (Kagoshima Univ.), Eiichiro Tanaka (Waseda Univ.)
- 14:55 A friction-based passive haptic mouse using 2-stage electro-adhesion
*Naoya Matsutani, Shunsuke Yoshimoto, Akio Yamamoto (Univ. Tokyo)
- 15:10 Design and simulation of a novel finger exoskeleton based on shape memory alloy actuators
*Elio Matteo Curcio, Giuseppe Carbone (Univ. of Calabria)
- 15:25 - 15:35 Break

Session 3 Modeling and evaluation

(15:35 - 16:50)

Chair: Yukio Takeda (Tokyo Tech.)

- 15:35 Mobile robotics for industrial applications
*Rocco Galati, Giacomo Mantriota, Giulio Reina (Polytechnic Univ. of Bari)
- 15:50 Head shaking test: human balance ability evaluation test by estimating control parameters for fall preventions
*Emiko Uchiyama (Univ. Tokyo), Wataru Takano (Osaka Univ.), Yoshihiko Nakamura, Tomoki Tanaka, Katsuya Iijima (Univ. Tokyo)
- 16:05 User-friendly interface for trajectory learning of an assistive mobile manipulator
*Lorenzo Baglieri, Luigi Tagliavini, Andrea Botta, Giovanni Colucci, Giuseppe Quaglia (Politecnico di Torino)
- 16:20 Experimental testing of the torveastro astronaut robot
*Jorge Enrique Araque Ishidro, Marco Ceccarelli (Univ. of Rome Tor Vergata)
- 16:35 Experimental characterization of a flexible joint with controlled stiffness for the development of a rehabilitation passive hand
*Mohammad Jabari, Giovanni Colucci, Luigi Tagliavini, Lorenzo Baglieri, Carmen Visconte (Politecnico di Torino)
- 16:50 - 17:00 Break

Closing Ceremony

- 17:00 Young Investigator Fund, Best Paper Award Ceremony
Chair: Atsushi Konno (Hokkaido Univ.)
- 17:15 Closing address by Masaharu Komori (Kyoto Univ.), Vice-president of Jc-IFTtoMM